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SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: JANNES, GEERT  
ROSSAU, RUDI  
VAN HEUVERSWYN, HUGO
- (ii) TITLE OF INVENTION: SIMULTANEOUS DETECTION, IDENTIFICATION  
AND DIFFERENTIATION OF EUBACTERIAL TAXA USING A  
HYBRIDIZATION ASSAY
- (iii) NUMBER OF SEQUENCES: 216
- (iv) CORRESPONDENCE ADDRESS:  
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(E) COUNTRY: USA  
(F) ZIP: 22201
- (v) COMPUTER READABLE FORM:  
(A) MEDIUM TYPE: Floppy disk  
(B) COMPUTER: IBM PC compatible  
(C) OPERATING SYSTEM: PC-DOS/MS-DOS  
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:  
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(A) APPLICATION NUMBER: EP 94870106.5  
(B) FILING DATE: 24-JUN-1994
- (x) ATTORNEY/AGENT INFORMATION:  
(A) NAME: SADOFF, B.J.  
(B) REGISTRATION NUMBER: 36,663  
(C) REFERENCE/DOCKET NUMBER: 1487-14
- (xi) TELECOMMUNICATION INFORMATION:  
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(2) INFORMATION FOR SEQ ID NO: 1:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

ACTGGATAGT GGTGCGAGC ATCTA

25

(2) INFORMATION FOR SEQ ID NO: 2:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

CTTCTGAATA GTGGTTGCGA GCATCT

26

(2) INFORMATION FOR SEQ ID NO: 3:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

GGGTGCATGA CAACAAAGTT GGCCA

25

(2) INFORMATION FOR SEQ ID NO: 4:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

GACTTGTTCC AGGTGTGTC CCAC

24

(2) INFORMATION FOR SEQ ID NO: 5:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

CGGCTAGCGG TGGCGTGTC T

21

(2) INFORMATION FOR SEQ ID NO: 6:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 26 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

CAACAGCAAA TGATTGCCAG ACACAC

26

(2) INFORMATION FOR SEQ ID NO: 7:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

GAGGGGTTCC CGTCTGTAGT G

21

(2) INFORMATION FOR SEQ ID NO: 8:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 22 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

TGAGGGGTTC TCGTCTGTAG TG

22

(2) INFORMATION FOR SEQ ID NO: 9:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

CACTCGGTTCG ATCCGTGTGG A

21

(2) INFORMATION FOR SEQ ID NO: 10:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

TCGGTCCGTC CGTGTGGAGT C

21

(2) INFORMATION FOR SEQ ID NO: 11:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

GTGGCCGGCG TTCATCGAAA

20

(2) INFORMATION FOR SEQ ID NO: 12:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 25 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

GCATAGTCCT TAGGGCTGAT GCGTT

25

(2) INFORMATION FOR SEQ ID NO: 13:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 25 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

GCTGATGCGT TCGTCGAAAT GTGTA

25

(2) INFORMATION FOR SEQ ID NO: 14:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

116  
CTGATGCGTT CGTCGAAATG TGT

23

(2) INFORMATION FOR SEQ ID NO: 15:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

TGATGCGTTC GTCGAAATGT GT

22

(2) INFORMATION FOR SEQ ID NO: 16:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

GGCTGATGCG TTCGTCGAAA TGTGTAA

27

(2) INFORMATION FOR SEQ ID NO: 17:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

ACTAGATGAA CGCGTAGTCC TTGT

24

(2) INFORMATION FOR SEQ ID NO: 18:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid

117  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

TGGACGAAAA CCGGGTGCAC AA

22

(2) INFORMATION FOR SEQ ID NO: 19:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 38 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

GTGTAATTTC TTTTAACT CTTGTGTGTA AGTAAGTG

38

(2) INFORMATION FOR SEQ ID NO: 20:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

TGGCCGGCGT GTTCATCGAA A

21

(2) INFORMATION FOR SEQ ID NO: 21:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

118  
(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

GCACTTCAAT TGGTGAAGTG CGAGCC

26

(2) INFORMATION FOR SEQ ID NO: 22:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

GCGTGGTCTT CATGGCCGG

19

(2) INFORMATION FOR SEQ ID NO: 23:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

ACGCGTGGTC CTTCTGTGG

18

(2) INFORMATION FOR SEQ ID NO: 24:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

TCGGCTCGTT CTGAGTGGTG TC

22



(2) INFORMATION FOR SEQ ID NO: 25:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

GATGCGTTTG CTACGGGTAG CGT 23

(2) INFORMATION FOR SEQ ID NO: 26:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

GATGCGTTGC CTACGGGTAG CGT 23

(2) INFORMATION FOR SEQ ID NO: 27:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

ATGCGTTGCC CTACGGGTAG CGT 23

(2) INFORMATION FOR SEQ ID NO: 28:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 22 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

CGGGCTCTGT TCGAGAGTTG TC

22

(2) INFORMATION FOR SEQ ID NO: 29:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:

GGTGTGGACT TTGACTTCTG AATAG

25

(2) INFORMATION FOR SEQ ID NO: 30:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

CGGCAAAACG TCGGACTGTC A

21

(2) INFORMATION FOR SEQ ID NO: 31:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

AACACCCTCG GGTGCTGTCC

20

(2) INFORMATION FOR SEQ ID NO: 32:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 21 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

GTATGCGTTG TCGTTCGCGG C

21

(2) INFORMATION FOR SEQ ID NO: 33:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 22 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

CGTGAGGGGT CATCGTCTGT AG

22

(2) INFORMATION FOR SEQ ID NO: 34:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 21 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

TGGTGTGCTG CGTGATCCGA T

21

## (2) INFORMATION FOR SEQ ID NO: 35:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 26 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

TGAATGTTTCG TGGATGAACA TTGATT

26

## (2) INFORMATION FOR SEQ ID NO: 36:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 23 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

CACTGGTGAT CATTCAAGTC AAG

23

## (2) INFORMATION FOR SEQ ID NO: 37:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 33 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

TGAATGTTTCG TVVATGAACA TTGATTCTG GTC

33

## (2) INFORMATION FOR SEQ ID NO: 38:

- (i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 29 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

CTCTTTCACT GGTGATCATT CAAGTCAAG

29

(2) INFORMATION FOR SEQ ID NO: 39:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:

CAAGTAACCG AGAATCATCT GAAAGTGAAT C

31

(2) INFORMATION FOR SEQ ID NO: 40:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 36 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:

AAACAACCTT TACTTCGTAG AAGTAAATTG GTTAAG

36

(2) INFORMATION FOR SEQ ID NO: 41:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 32 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41:

TGAGAGGTTA GTACTTCTCA GTATGTTTGT TC

32

(2) INFORMATION FOR SEQ ID NO: 42:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42:

AGGCACTATG CTTGAAGCAT CGC

23

(2) INFORMATION FOR SEQ ID NO: 43:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 38 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43:

GTTAGCATAA ATAGGTAAC TTTATGACA CAAGTAAC

38

(2) INFORMATION FOR SEQ ID NO: 44:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 36 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44:

AGTTAGCATA AGTAGTGTA CTATTTATGA CACAAG

36

(2) INFORMATION FOR SEQ ID NO: 45:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 45:

GGAAGAAGCC TGAGAAGGTT TCTGAC

26

(2) INFORMATION FOR SEQ ID NO: 46:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 46:

GCATTTATAT GTAAGAGCAA GCATTCTATT TCA

33

(2) INFORMATION FOR SEQ ID NO: 47:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47:

GAGTAGCGTG GTGAGGACGA GA

22

(2) INFORMATION FOR SEQ ID NO: 48:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 48:

GGATAACTGT CTTAGGACGG TTTGAC

26

(2) INFORMATION FOR SEQ ID NO: 49:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 30 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 49:

ATCGGTGGTA AATTAAACCC AAATCCCTGT

30

(2) INFORMATION FOR SEQ ID NO: 50:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 30 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 50:

CAGTTCTGAA AGAACATTTC CGCTTCTTTC

30

(2) INFORMATION FOR SEQ ID NO: 51:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 30 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO



(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 51:

CACCCATTAA TTTTTCGGT GTTAAACCC

30

(2) INFORMATION FOR SEQ ID NO: 52:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 31 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 52:

CAAAACTGAA AACGACAATC TTTCTAGTTC C

31

(2) INFORMATION FOR SEQ ID NO: 53:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 30 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 53:

TACCAAGCAA AACCGAGTGA ATAAAGAGTT

30

(2) INFORMATION FOR SEQ ID NO: 54:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 54:

CAGAAGATGC GGAATAACGT GAC

23

(2) INFORMATION FOR SEQ ID NO: 55:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 26 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 55:

AACGAAGCCG TATGTGAGCA TTGAC

26

(2) INFORMATION FOR SEQ ID NO: 56:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 31 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 56:

GAACGTAAC TCAATGTTAAC GTTTGACTTA T

31

(2) INFORMATION FOR SEQ ID NO: 57:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 27 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 57:

GCTTAAGTGC AACTGCTCT AACTGA

27

(2) INFORMATION FOR SEQ ID NO: 58:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 27 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 58:

CACGGTAATT AGTGTGATCT GACGAAG

27

(2) INFORMATION FOR SEQ ID NO: 59:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 22 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 59:

CGTGCCGCCT TCGTTTCTCT TT

22

(2) INFORMATION FOR SEQ ID NO: 60:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 22 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 60:

TTCGCTTCGG GGTGGATCTG TG

22

(2) INFORMATION FOR SEQ ID NO: 61:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 28 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 61:

CAAAACTGAC TTACGAGTCA CGTTTGAG

28

(2) INFORMATION FOR SEQ ID NO: 62:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 62:

GATGTATGCT TCGTTATTCC ACGCC

25

(2) INFORMATION FOR SEQ ID NO: 63:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 63:

GGTCAAACCT CCAGGGACGC C

21

(2) INFORMATION FOR SEQ ID NO: 64:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 64:

GCGGTAATGT GTGAAAGCGT TGCC

24

(2) INFORMATION FOR SEQ ID NO: 65:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 65:

TCCCTTGTGG CCTGTGTG

18

(2) INFORMATION FOR SEQ ID NO: 66:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 19 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 66:

TCCTTCATCG GCTCTTCCA

19

(2) INFORMATION FOR SEQ ID NO: 67:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 18 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 67:

GATGCCAAGG CATCCACC

18

(2) INFORMATION FOR SEQ ID NO: 68:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 19 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 68:

CCTCCCACGT CCTTCATCG

19

(2) INFORMATION FOR SEQ ID NO: 69:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 22 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 69:

AAGGTTTCTG ACTAGGTTGG GC

22

(2) INFORMATION FOR SEQ ID NO: 70:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 22 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 70:

GGTGAAGTGC TTGCATGGAT CT

22

(2) INFORMATION FOR SEQ ID NO: 71:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 71:

ACCTGTGAGT TTTCGTTCTT CTC

23

(2) INFORMATION FOR SEQ ID NO: 72:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 72:

CTATTGTTC AGTTTTGAGA GGTT

24

(2) INFORMATION FOR SEQ ID NO: 73:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 73:

ATTTTCCGTA TCAGCGATGA TAC

23

(2) INFORMATION FOR SEQ ID NO: 74:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 74:

ACGAAGTAAA GGTTGTTTTT CT

22

(2) INFORMATION FOR SEQ ID NO: 75:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs

(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 75:

GAGAGGTTAC TCTCTTTTAT GTCAG

25

(2) INFORMATION FOR SEQ ID NO: 76:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 275 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 76:

AAGGAGCACC ACGAAAACGC CCCAACTGGT GGGGCGTAGG CCGTGAGGGG TTCTTGCTCTG	60
TAGTGGGCGA GAGCCGGGTG CATGACAACA AAGTTGGCCA CCAACACACT GTTGGGTCCT	120
GAGGCAACAC TCGGACTTGT TCCAGGTGTT GTCCCACCGC CTTGGTGTTG GGGTGTTGGTG	180
TTTGAGAACT GGATAGTGGT TGCGAGCATC AATGGATACG CTGCCGGCTA GCGGTGGCGT	240
GTTCTTTGTG CAATATTCTT TGGTTTTTGT TGTGT	275

(2) INFORMATION FOR SEQ ID NO: 77:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 278 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 77:

AAGGAGCACC ACGAAAAGCA CCCCAACTGG TGGGGTGCGA GCCGTGAGGG GTTCCCGTCT	60
GTAGTGGACG GGGGCCGGNT GCGCAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCCGTC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180



TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TGGTCTTCGT GGCCGGCGTT 240  
CATCGAAATG TGTAATTTCT TCCTTAACTC TTGTGTGT 278

(2) INFORMATION FOR SEQ ID NO: 78:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 278 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 78:

AAGGAGCACC ACGAAAAGCA CCCCAACTGG TGGGGTGCGA GCCGTGAGGG GTTCCCGTCT 60  
GTAGTGGACG GGGGCCGGGT GCGCAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT 120  
GAGACAACAC TCGGTCCGTC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT 180  
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TGGTCTTCGT GGCCGGCGTT 240  
CATCGAAATG TGTAATTTCT TTTTAACTC TTGTGTGT 278

(2) INFORMATION FOR SEQ ID NO: 79:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 280 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 79:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCCCGTCT 60  
GTAGTGGACG GGGGCCGGNT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT 120  
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT 180  
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TAGTCCTTGT GGCTGATGCG 240  
CTCGTCGAAA TGTGTAATTT CTTCTTTGGT GTNTGTGTGT 280

(2) INFORMATION FOR SEQ ID NO: 80:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 281 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 80:

AAGGAGCACC ACGAAAAGCA TCCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAACCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCG TAGTCCTTTG TGGCTGATGC	240
GTTTCATCAA ATGTGTAATT TCTTTTTTGG TTTNTGTGTG T	281

(2) INFORMATION FOR SEQ ID NO: 81:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 280 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 81:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCCCCTCT	60
GTAGTGGACG GGGGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TAGCCCTTGC GGCTGATGCG	240
TTGCGCGAAA TGTGTAATTT CTTCTCTGGT TTCTGTGTGT	280

(2) INFORMATION FOR SEQ ID NO: 82:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 282 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 82:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT 60  
 GTAGTGGACG GNAGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT 120  
 GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT 180  
 TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCG TAGTCCTTCG TGGCTGATGC 240  
 GTTCATCGAA ATGTGTAATT TCTTCTTTGG TTTTGGGTGT GT 282

(2) INFORMATION FOR SEQ ID NO: 83:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 282 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 83:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCCCCTCT 60  
 GTAGTGGACG GGGGCCGGGT GCACAACAGC AAATGATCGC CAGACACACT ATTGGGCCCT 120  
 GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT 180  
 TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TAGTCCTTTG GGGCTGATGT 240  
 GTTTCATCAA AATGTGTAAT TTCTTTTNG GTTTTNGTGT GT 282

(2) INFORMATION FOR SEQ ID NO: 84:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 281 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 84:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT 60  
 GTAGTGGACG GGAGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT 120  
 GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT 180  
 TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCG TAGTCCTTCG TGGCTGATGC 240  
 GTTCATTGAA ATGTGTAATT TCTTCTCTGG TTTTGTGTG T 281

## (2) INFORMATION FOR SEQ ID NO: 85:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 280 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 85:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCCCGTCT	60
GTAGTGGACG GGGGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TAGTCCTTGT GGCTGATGCG	240
CTCGTCGAAA TGTGTAATTT CTTCTTTGGT TTTTGTGTGT	280

## (2) INFORMATION FOR SEQ ID NO: 86:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 282 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 86:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCCCGTCT	60
GTAGTGGACG GGGGCCGGGT GCGCAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTTGGTGT	180
TTGAGTATTG GATAGTGGTT GCGAGCATCT AGATGAGCGC GTAGTCCTTG TGGCTGATGC	240
GTTCGTCGAA ATGTGTAATT TCTTCTTTGG GTTTTTGTGT GT	282

## (2) INFORMATION FOR SEQ ID NO: 87:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 281 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 87:

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AAGGAGCACC ACGAAAAGCA CCCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT      60
GTAGTGGACG GNAGCCGGNT GCGCAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT      120
GAGACAACAC TCGGNCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTNGTGTT      180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGGGCGCG TAGTCCTTTG TGA CTGATGC      240
GTTTCATCAA ATGTGTAATT TCTTTTTTGN NTTTNGTGTG T                          281

```

(2) INFORMATION FOR SEQ ID NO: 88:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 281 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 88:

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AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT      60
GTAGTGGACG GGAACCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT      120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTG      180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TAGTCCTTTG TGGCTGACGC      240
GTTTCATCGA ATGTGTAATT TCTTCTTTGG TTTTGTGTG T                          281

```

(2) INFORMATION FOR SEQ ID NO: 89:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 280 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 89:

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AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGANGG GTTCCCCTCT      60
GTAGTGGACG GGGGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT      120

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GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT 180  
 TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TAGTCCTTAG GGCTGATGCG 240  
 TTCGTCGNAA TGTGTAATTT CTTCTTTGGT TTTTGTGTGT 280

(2) INFORMATION FOR SEQ ID NO: 90:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 282 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 90:

AAGGAGCACC ACGAAAAGCA TCCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT 60  
 GTAGTGGACG AAAACCGGGT GCACAACAGC AAATAATTGC CAGACACACT ATTGGGCCCT 120  
 GAGACAACAC TCGGTCGATC CGTGTGGTGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT 180  
 TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TAGTCCTTCG TGGCTGACGT 240  
 GTTCATCGAA ATGTGTAATT TCTTNTNTTA ACTCTTGTGT GT 282

(2) INFORMATION FOR SEQ ID NO: 91:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 280 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 91:

AAGGAGCACC ACGAAAAGCA CCCCATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT 60  
 GTAGTGGACG GGAGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT 120  
 GAGACAACAC TCGGTCAGTC CGTGTGGTGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT 180  
 TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TAGTCCTTGT GACTGACGTG 240  
 TTCATCGAAA TGTGTAATTT CTTTCTAAC TCTTGTGTGT 280

(2) INFORMATION FOR SEQ ID NO: 92:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 281 base pairs
  - (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA  
(iii) HYPOTHETICAL: NO  
(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 92:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGAAC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TGGTCTTCAT GGCCGGCGTG	240
TTTCATCGAAA TGTGTAATAT CTTCTCTGGT TTTCGGTGTG T	281

(2) INFORMATION FOR SEQ ID NO: 93:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 280 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA  
(iii) HYPOTHETICAL: NO  
(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 93:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAACCGGNT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TGGTCTTCAT GGCCGGCGTG	240
TTTCATCGAAA TGTGTAATTT CTTTTNNAC TCTTGTGTGT	280

(2) INFORMATION FOR SEQ ID NO: 94:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 280 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA  
(iii) HYPOTHETICAL: NO  
(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 94:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGAAC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TGGTCTTCAT GGCCGGCGTG	240
TTCATCGAAA TGTGTAATTT CTCTTTGGT TTTNGTGTGT	280

## (2) INFORMATION FOR SEQ ID NO: 95:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 281 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 95:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAACCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TAGTCCTTCG NGGNCNGCGT	240
GTTTCATCGAA ATGTGTAATT TCTNTTTTAA CTCTNGTGTG T	281

## (2) INFORMATION FOR SEQ ID NO: 96:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 281 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 96:

AAGGAGCACC ACGAAAAGCA TCCCAATTGG TGGGGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAACCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TAGTCCTTCG GGGCCGGCGT	240
GTTTCATCGAA ATGTGTAATT TCTTTTTTAA CTCTTGTTGT T	281



## (2) INFORMATION FOR SEQ ID NO: 97:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 280 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 97:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTCCGA GCCGTGAGGG GTTCTCGTCT 60  
 GTAGTGGACG AAAACCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT 120  
 GAGACAACAC TCGGTCGAAC CGTGTGGAGT CCTCCATCT TGGTGGTGGG GTGTGGTGT 180  
 TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TGGTCTTCAT GGCCGGCGTG 240  
 TTCATCGAAA TGTGTAATTT CTTCTTTAAC TCTTGTGTGT 280

## (2) INFORMATION FOR SEQ ID NO: 98:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 280 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 98:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTCCGA GCCGTGAGGG GTTCTCGTCT 60  
 GTAGTGGACG AAAACCGGGT GCACAACAGN AAATGATTGC CAGACACACT ATTGGGCCCT 120  
 GAGACAACAC TCGGTCGATC CGTGTGGAGT CCTCCATCT TGGTGGTGGG GTGTGGTGT 180  
 TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TGGTCTTCAT GGCCNGCGTG 240  
 TTCATCGAAA TGTGTAATTT CTTTTTTAAC TCTTGTGTGT 280

## (2) INFORMATION FOR SEQ ID NO: 99:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 280 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 99:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAACCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGG TGGTCTTCAT GGCCGGCGTG	240
TTCATCGAAA TGTGTAATTT CTTTTTAAC TCTTGTGTGT	280

(2) INFORMATION FOR SEQ ID NO: 100:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 281 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 100:

AAGGAGCACC ACGAAAAGCA CCCCACCTGG TGGGGTGCGA GCCGTGAGGG GTCCTCGCCT	60
GTAGTGGGCG GGGGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGGCAACAC TCGGCTCGTT CTGAGTGGTG TCCCTCCATC TTGGTGGTGG GGTGTGGTGT	180
TTGAGTATTG GATAGTGGTT GCGAGCATCT AAACGGATGC GTGGCCGGCA ACGGTGGCGT	240
GTTCGTTGAA ATGTGTAATT TCTTTTTTGG TTTTGTGTG T	281

(2) INFORMATION FOR SEQ ID NO: 101:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 274 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 101:

AAGGAGCACC ACGAAAAGCA TCCCAACAAG TGGGGTGCAA NCCGTGAGGG GTTCTCGTCT	60
---	----

GTAGTGGACG AAAGCCGGGT GCACGACAAC AAGCAAAGCC AGACACACTA TTGGGTCCTG 120  
 AGGCAACACT CGGGCTCTGT TCGAGAGTTG TCCCACCATC TTGGTGGTGG GGTGTGGTGT 180  
 TTGAGAATTG GATAGTGGTT GCGAGCATCA AATGGATGCG TTGCCCTACG GGTAGCGTGT 240  
 TCTTTTGTGC AATTTTATTC TTTGGTTTTT GTGT 274

(2) INFORMATION FOR SEQ ID NO: 102:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 293 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 102:

AAGGAGCACC ATTTCCAGT CGATGAACTA GGGAAACATA AGTAGGCATC TGTAGTGGAT 60  
 ATCTACTTGG TGAATATGTT TTGTAAATCC TGTCCACCCC GTGGATGGGT AGTCGGCAAA 120  
 ACGTCGGACT GTCATAAGAA TTGAAACGCT GGCACACTGT TGGGTCCTGA GGCAACACGT 180  
 TGTGTGTGCA CCCTGCTTGG TGGTGGGGTG TGGACTTTGA CTTCTGAATA GTGGTTGCGA 240  
 GCATCTAAAC ATAGCCTCGC TCGTTTTTGA GTGGGGCTGG TTTTGCAATT TTA 293

(2) INFORMATION FOR SEQ ID NO: 103:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 296 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 103:

AAGGAGCACC ATTTCCAGT CGGATGAACT AGGGAACATA AAGTAGGCAT CTGTAGTGGG 60  
 TATCTACTTG GTGAATATGT TTTGTAAATC CTGTCCACCC CCGTGGATGG GTAGTCGGCA 120  
 AAACGTCGGA CTGTCATAAG AATTGAAACG CTGGCACACT GTTGGGTCCT GAGGCAACAC 180  
 GTTGTGTTGT CACCCTGCTT GGTGGTGGGG TGTGGACTTT GACTTCTGAA TAGTGGTTGC 240  
 GAGCATCTAA ACATAGCCTC GCTCGTTTTT GAGTGAGGCT GGTTTTTGCA ATTTTA 296

(2) INFORMATION FOR SEQ ID NO: 104:

- (i) SEQUENCE CHARACTERISTICS:

146

(A) LENGTH: 274 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA  
(iii) HYPOTHETICAL: NO  
(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 104:

AAGGAGCACC ACGAAGAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTCATCGTCT 60  
GTAGTGGACG AAGACCGGGT GCACGACAAC AAGCTAAGCC AGACACACTA TTGGGTCCTG 120  
AGGCAACACC CTCGGGTGCT GTCCCCCAT CTTGGTGGTG GGGTGTGGTG TTTGAGAATT 180  
GGATAGTGGT TGCGAGCATC AAAATGTATG CGTTGTCGTT CTCGGCAACG TGTTCTTTTT 240  
GTGCAATTTA TTCTTTGGTT TTTGTAGTGT TTGT 274

(2) INFORMATION FOR SEQ ID NO: 105:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 278 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA  
(iii) HYPOTHETICAL: NO  
(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 105:

AAGGAGCACC ACGAAGAGCA CTCCAATTGG TGGGGTGCGA GCCGNGAGGG GTCATCGTCT 60  
GTAGTGGACG AAGACTGGGT GCACGACAAC AAAGCAAGCC AGACACACTA TTGGGTCCTG 120  
AGGCAACACC CTCGGGTGCT GCCCCTCCAT CTTGGTGGTG GGGTGTGGTG TTTGAGAACT 180  
GGATAGTGGT TGCGAGCATC AAAAATGTAT GCGTTGTCGT TCGCGACAAC GTGTTCTTTT 240  
TGTGCAATTT TAATCTTTT GGTTTTGTTA GTGTTTGT 278

(2) INFORMATION FOR SEQ ID NO: 106:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 276 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA  
(iii) HYPOTHETICAL: NO  
(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 106:

AAGGAGCACC ACGAGAAGCA CTCCAATTGG TGGGGTGCAA GCCGTGAGGG GTCATCGTCT	60
GTAGTGGACG AAGACCGGGT GCACGACAAC AAGCAAAGCC AGACACACTA TTGGGTCCTG	120
AGGCAACACC CTCGGGTGCT GTCCCCCAT CTTGGTGGTG GGGTGTGGTG TTTGAGAACT	180
GGATAGTGGT TGCGAGCATC AAAATGTATG CGTTGTCGTT CGCGGCAACG TGTTCTTTT	240
GTGCAATTTT TATTCTTTGG TTTTGTAGT GTTTGT	276

(2) INFORMATION FOR SEQ ID NO: 107:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 277 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 107:

AAGGAGCACC ACGAAAAGCA CCCCATTGG TGGGGTGCAA GCCGTGAGGG GTTCCCGCCT	60
GTAGTGGGCG GGGCCGGGTG CGCAACAGCA AATGATTGCC AGACACACTA TTGGGCCCTG	120
AGGCAACACT CGGATCGATT GAGTGCTTGT CCCCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGAACTGG ATAGTGGTTG CGAGCATCTA AATGAACGCA CTGCCGATGG TGGTGTGTTT	240
GTGTTGTGTA ATTTTATTCT TTGTTTTTGT TGTGTTGT	277

(2) INFORMATION FOR SEQ ID NO: 108:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 282 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 108:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTNAGGG GTTCTCGTCT	60
GTAGTGGATG GCAGCCGGGT GCACANCAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCAGTC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGNGTT	180
TGAGTATTGG ATAGTGGTTG CGANCATCTA GATGAACGCG TAGTCCTCNG TGGCTGACGT	240

GTTTCATCAAA ATGTGTAATT TCTTTTANGG GTTNGGTGT CT

282

(2) INFORMATION FOR SEQ ID NO: 109:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 280 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 109:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGNGAGGG GTTCTCGCCT	60
GTAGTGGNCG AGGGCCGGAT GCACAACAAC ACATGATTGC CAGACACACT ATTGGGCCCT	120
GANACAACAC TCGGCCAGTC CGTGTGGTGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATNGG ATAGTNGTTG NGANCATCTA AACGGCTGCG TNGNCNNGAA CGGTGGCGTG	240
TTCGNTAAAA TGTGTAATT CTTTTNGGT TTGGGTGTNT	280

(2) INFORMATION FOR SEQ ID NO: 110:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 280 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 110:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGCCT	60
GTAGTGGGCG ANGGCCGGGT GCACAACAAC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGCCAGTC CGTGTGGTGT CCCNCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA AANGNTGCG TTGCCGNNAN CNGTGGCGTN	240
TTCGNTAAAA TGTGTAANTT CTTTTNGGT TTGTGTGTGT	280

(2) INFORMATION FOR SEQ ID NO: 111:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 471 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 111:

```
ATCGAAGATC CCGGCTTCTT CATAAGCTCC CACACGAATT GCTTGATTCA CTGGTTAGAC      60
GATTGGGTCT GTAGCTCAGT TGGTTAGAGC GCACCCCTGA TAAGGGTGAG GTCGGCAGTT      120
CGAATCTGCC CAGACCCACC AATTGTTGGT GTGCTGCGTG ATCCGATACG GGGCCATAGC      180
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGG AGTTCGATCC TCCTTGGCTC      240
CACCATCTAA AACAAATCGTC GAAAGCTCAG AAATGAATGT TCGTGGATGA ACATTGATTT      300
CTGGTCTTTG CACCAGAACT GTTCTTTAAA AATTCGGGTA TGTGATAGAA GTAAGACTGA      360
ATGATCTCTT TCACTGGTGA TCATTCAAGT CAAGGTAAAA TTTGCGAGTT CAAGCGCGAA      420
TTTTCGGCGA ATGTCGTCTT CACAGTATAA CCAGATTGCT TGGGGTTATA T              471
```

(2) INFORMATION FOR SEQ ID NO: 112:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 520 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 112:

```
ATCGAAGACA TCAGCTTCTT CATAAGTATC CACACGAATT GCTTGATTCA TAGTCGAACG      60
AATGCTGTAA CGCGACCCGT GTTATAGGTC TGTAGCTCAG TTGGTTAGAG CGCACCCCTG      120
ATAAGGGTGA GGTGCGCAGT TCAAATCTGC CCAGACCTAC CAATTGCTTG GTCGAGAAGA      180
ATACGGGGCC ATAGCTCAGC TGGGAGAGCG CCTGCCTTGC ACGCAGGAGG TCAGCGGTTC      240
GATCCCGCTT GGCTCCACCA CTCTCTCGTG TTGCGGTGAG TGTAAAGAG TTCAGAAATG      300
ATGCCGCTTC AGGTTTGTCC TGTGAGTGC TGATTCTGG TCTTTTGACC GGTACGAAAA      360
TCGTTCTTTA AAAATTGGA TATGTGATAG AAGTGACTGA TTAATTGCTT TCACTGGCAA      420
TTGATCTGGT CAAGGTAAAA TTTGTAGTTC TCAAGACGCA AATTTTCGGC GAATGTCGTC      480
TTCACGATTG AGACAGTAAC CAGATTGCTT GGGGTTATAT              520
```

(2) INFORMATION FOR SEQ ID NO: 113:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 504 base pairs
  - (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA  
(iii) HYPOTHETICAL: NO  
(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 113:

ATCGAAGACA CCGGCTTCGT CATAAGCTCC CACACGAATT GCTTGATTCA CTTGCGAAAG	60
GCGATTGGGT TTAGACCCGA GAGTAACGAT TGGGTCTGTA GCTCAGTTGG TTAGAGCGCA	120
CCCCTGATAA GGGTGAGGTC GGCAGTTCGA ATCTGCCCAG ACCCACC AAT CGAAGGGGCC	180
ATAGCTCAGC TGGGAGAGCG CCTGCTTTC ACGCAGGAGG TCAGCGGTTG GATCCCGCTT	240
GGCTCCACCA TTAAGTCTAG TCGCCGAAAG CTCAGAAATG AGTGTTTACC AGGATGAGGT	300
TGATTGCCTG GGTGAACAT TGATTCTTGG ACTTTGCGCC AGRAGTTTC TTAAAAAATT	360
TGGGTATGTG ATAGAAGTAG ACCGATGTGT TGCTTTC ACT GGCAGCATGT CGCGTCAAGG	420
TAAATTTTGC GTGTTCTCTA TGCAATTTT CGGCGAATGT CGTCTTCACG TTATAGACAG	480
TAACCAGATT GCTTGGGGTT ATAT	504

(2) INFORMATION FOR SEQ ID NO: 114:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 499 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA  
(iii) HYPOTHETICAL: NO  
(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 114:

ATCGAAGACT TCAGCTTCTT CATAAGTCC CACACGAATT GCTTGATTCA CTTGCGAAAA	60
GCGATTGGGT TGAGACCCGA GAGTGACGAT TGGGTCTGTA GCTCAGTTGG TTAGAGCGCA	120
CCCCTGATAA GGGTGAGGTC GGCAGTTCGA ATCTGCCCAG ACCCACC AAT TGTCGGGATG	180
GCCAGTGTCA AATGGGGCCA TAGCTCAGCT GGGAGAGCGC CTGCTTTGCA CGCAGGAGGT	240
CAGGAGTTCTG ATCCTCCTTG GCTCCACCAT CAACTCAGCA TCGCTGAAAG CTCAGAAATG	300
AACATTGGTA GTTCAATGTT GATTTCTGGT CTTTGCGCCA GAACTGTTCT TTAAAAAATT	360
GGGTATGTGA TAGAAGTGAC TAACAGCGTG TTCACTGCA CGTTGTTAAT CAAGGCAAAA	420
TTTGCGAGTT CAAGCGCGAA TTTTCGGCGA ATGTCGTCTT CAGTTACGA ATCTATAACC	480
AGATTGCTTG GGGTTATAT	499



(2) INFORMATION FOR SEQ ID NO: 115:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 468 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 115:

ATCGACGACA TCAGCTGTCT CATAAGCTCC CACACGAATT GCTTGATTCA TTGAAGAAGA	60
CGATTAGGTT AGCAACCTTC GATTGGGTCT GTAGCTCAGT TGGTTAGAGC GCACCCCTGA	120
TAAGGGTGAG GTCGGCAGTT CGAATCTGCC CAGACCCACC AATTGCTGG GCCCATAGCT	180
CAGCTGGGAG AGCGCCTGCC TTGCACGCAG GAGGTCAGCG GTTCGATCCC GCTTGGCTCC	240
ACCACCCCGC TTGCCAGTTT GTCAAAGCTT AGAAATGAAT ATTCCGCTCG AATATTGATT	300
TCTGAACTTT ATCAGAATCG TTCTTTAAAA ATTTGGGTAT GTGATAGAAA GATAGACTGG	360
ACAGCACTTT CACTGGTGTG TGTTCAAGCT AAGGTAAAAT TTGTGAGTAA TTACAAGTTT	420
TCGGCGAATG TTGTCTTCAC AGTATAACCA GATTGCTTGG GGTATAT	468

(2) INFORMATION FOR SEQ ID NO: 116:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 246 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 116:

TAAGGAAAAG GAAACCTGTG AGTTTTCGTT CTTCTCTGTT TGTTCACTTT TGAGAGGTTA	60
ATTCTTCTCT ATACTGTTTG TTCTTTGAAA ACTAGATAAG AAAGTTAGTA AAGTTAGCAT	120
AAATAGGTAA CTATTTATGA CACAAGTAAC CGAGAATCAT CTGAAAGTGA ATCTTTCATC	180
TGATTGGAAG TATCATCGCT GATACGAAAA ATCAGAAAAA CAACCTTTAC TTCATCGAAG	240
TAAATT	246

(2) INFORMATION FOR SEQ ID NO: 117:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 246 base pairs
  - (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 117:

CTAAGGAAAA GGAAACCTGT GAGTTTTCGT TCTTCTCTAT TTGTTTCAGTT TTGAGAGGTT	60
AGTACTTCTC AGTATGTTTG TTCTTTGAAA ACTAGATAAG AAAGTTAGTA AAGTTAGCAT	120
AGATAATTTA TTATTTATGA CACAAGTAAC CGAGAATCAT CTGAAAGTGA ATCTTTCATC	180
TGATTGGAAG TATCATCGCT GATACGGAAA ATCAGAAAAA CAACCTTTAC TTCGTAGAAG	240
TAAATT	246

(2) INFORMATION FOR SEQ ID NO: 118:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 246 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 118:

TAAGGAAAAG GAAACCTGTG AGTTTTCGTT CTTCTCTGTT TGTTTCAGTTT TGAGAGGTTA	60
TTACTTCTCT GTATGTTTGT TCTTTGAAAA CTAGATAAGA AAGTTAGTAA AGTTAGCATA	120
AGTAGTGTA CTATTTATGA CACAAGTAAC CGAGAATCAT CTGAAAGTGA ATCTTTCATC	180
TAATTCGACG TATCATCGCT GATACAGACA ATTAGAAAAA CAACCTTTAC TTCGACGAAG	240
TAAATT	246

(2) INFORMATION FOR SEQ ID NO: 119:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 363 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 119:

GGCCTATAGC TCAGCTGGTT AGAGCGCACG CCTGATAAGC GTGAGGTGGA TGGTTCGAGT 60  
 CCATTTAGGC CCACTTTTTC TTTCTGACAG AAGAAACACT GTATAACCTA TTTAAGGGGC 120  
 CTTAGCTCAG CTGGGAGAGC GCCTGCTTTG CACGCAGGAG GTCAGCGGTT CGATCCCGCT 180  
 AGGCTCCACC AAAATTGTTC TTTGAAACT AGATAAGAAA GTTAGTAAAG TTAGCATAAA 240  
 TAGGTAATA TTTATGACAC AAGTAACCGA GAATCATCTG AAAGTGAATC TTTTCATCTGA 300  
 TTGGAAGTAT CATCGCTGAT ACGAAAAATC AGAAAAACAA CCTTTACTTC ATCGAAGTAA 360  
 ATT 363

## (2) INFORMATION FOR SEQ ID NO: 120:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 496 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 120:

TAAGGAAAAG GAAACCTGTG AGTTTTCGTT CTTCTCTATT TGTTCAAGTT TGAGAGGTTA 60  
 CTCTCTTTTA TGTCAGATAA AGTATGCAAG GCACTATGCT TGAAGCATCG CGCCACTACA 120  
 TTTTGTACGG GCCTATAGCT CAGCTGGTTA GAGCGCACGC CTGATAAGCG TGAGGTGAT 180  
 GGTTCGAGTC CATTTAGGCC CACTTTTTCT TTCTGACATA AGAAATACAA ATAATCATAC 240  
 CCTTTTACGG GGCCTTAGCT CAGCTGGGAG AGCGCCTGCT TTGCACGCAG GAGGTCAGCG 300  
 GTTCGATCCC GCTAGGCTCC ACCAAAATTG TTCTTTGAAA ACTAGATAAG AAAGTTAGTA 360  
 AAGTTAGCAT AGATAATTTA TTATTTATGA CACAAGTAAC CGAGAATCAT CTGAAAGTGA 420  
 ATCTTTCATC TGATTGGAAG TATCATCGCT GATACGGAAA ATCAGAAAAA CAACCTTTAC 480  
 TTCGTAGAAG TAAATT 496

## (2) INFORMATION FOR SEQ ID NO: 121:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 498 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 121:

TAAGGAAAAG GAAACCTGTN AGTTTNCGTN CTTCTCTGTT TGTNCAGTTT TNAGAGGTTA	60
CTCTCTTTNA TGTCAGATAA AGTACGCACG GCACGTTGCC TTGGGCAAAG AGCCACTACA	120
TTATTGACGG GCCTATAGCT CAGCTGGTTA GAGCGCACGC CTGATAAGCG TGAGGTCGAT	180
GGTTCGAGTC CATTTAGGCC CACTTTTTCT TTCTGACAGA AGAAATCATT TGCACATCCT	240
ATTAATAAGG GNCCTTAGCT CAGCTGGGAG AGCGCCTGCT TTGCACGCAG GAGGTCAGCG	300
GTTGCATCCC GCTAGGCTCC ACCCAAATT GTTCTTTGAA AACTAGATAA GAAAGTTAGT	360
AAAGTTAGCA TAAGTAGTAT AACTATTTAT GACACAAGTA ACCGAGAATC ATCTGAAAGT	420
GAATCTTTCA TCTAATTCGA CGTATCATCG CTGATACAGA CAATTNGAAA AACCAACCTTT	480
ACTTCGACGA AGTAAATT	498

## (2) INFORMATION FOR SEQ ID NO: 122:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 229 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 122:

TAAGGATAAG GATAACTGTC TTAGGACGGT TTGACTAGGT TGGGCAAGCG TTTTTTTAAT	60
CTTGTATTCT ATTCCTTTTG CATTGTTAAG CGTTGTTTCC AAAACATTTA GTTTACGATC	120
AAGTATGTTA TGTAATAAT ATGGTAACAA GTAAATTCAC ATATAATAAT AGACGTTTAA	180
GAATATATGT CTTAGGTGA TGTTAACTTG CATGGATCAA TAATTACA	229

## (2) INFORMATION FOR SEQ ID NO: 123:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 248 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 123:

TAAGGATAAG GAAGAAGCCT GAGAAGGTTT CTGACTAGGT TGGGCAAGCA TTTATATGTA	60
---	----

AGAGCAAGCA TTCTATTTCA TTTGTGTTGT TAAGAGTAGC GTGGTGAGGA CGAGACATAT	120
AGTTTGTGAT CAAGTATGTT ATTGTAAAGA AATAATCATG GTAACAAGTA TATTCACGC	180
ATAATAATAG ACGTTTAAAGA GTATTTGTCT TTTAGGTGAA GTGCTTGCAT GGATCTATAG	240
AAATTACA	248

(2) INFORMATION FOR SEQ ID NO: 124:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 224 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 124:

CAAAATGGAGT TTTTATTTTT TATTTATCTT AAACACCCAT TAAATTTTTTC GGTGTTAAAA	60
CCCAAATCAA TGTGTTGCT CACAATAAC ACATTTGGTC AGTTTGTATC CAGTTCTGAA	120
AGAATGTTTT TGAACAGTTC TTTCAAACT GAAAACGACA ATCTTTCTAG TTCCAAAAAT	180
AAATACCAA GGATCAATAC AATAAGTTAC TAAGGGCTTA TGGT	224

(2) INFORMATION FOR SEQ ID NO: 125:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 252 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 125:

CTAATGAAGT TTTTACTTT TTCTTTTCAT CTTTAATAAA GATAAATACT AAACAAAACA	60
TCAAAATCCA TTTATTTATC GGTGGTAAAT TAAACCCAAA TCCCTGTTTG GTCTCACAAC	120
TAACATATTT GGTGAGATTG TATCCAGTTC TGAAAGAACA TTTCCGCTTC TTTCAAACT	180
GAAAACGACA ATCTTTCTAG TTCCAAATAA ATACCAAAGG ATCAATACAA TAAGTTACTA	240
AGGGGCTTATG GT	252

(2) INFORMATION FOR SEQ ID NO: 126:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 608 base pairs

(B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA  
 (iii) HYPOTHETICAL: NO  
 (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 126:

AACGAAAGAT TGACGATTGG TAAGAATCCA CAACAAGTTG TTCTTCATAG ATGTATCTGA	60
GGGTCTGTAG CTCAGTTGGT TAGAGCACAC GCTTGATAAG CGTGGGGTCA CAAGTTCAAG	120
TCTTGTCAGA CCCACCATGA CTTTGACTGG TTGAAGTTAT AGATAAAAGA TACATGATTG	180
ATGATGTAAG CTGGGGACTT AGCTTAGTTG GTAGAGCGCC TGCTTTGCAC GCAGGAGGTC	240
AGGAGTTCGA CTCTCCTAGT CTCCACCAGA ACTTAAGATA AGTTCGGATT ACAGAAATTA	300
GTAAATAAAG ATTGAGATCT TGGTTTATTA ACTTCTGTGA TTTCATTATC ACGGTAATTA	360
GTGTGATCTG ACGAAGACAC ATTAACTCAT TAACAGATTG GCAAAATTGA GTCTGAAATA	420
AATTGTTTAC TCAAGAGTTT AGGTAAAGCA ATTAATCTAG ATGAATTGAG AACTAGCAAA	480
TTAACTGAAT CAAGCGTTTT GGTATGTGAA TTTAGATTGA AGCTGTACAG TGCTTAAGTG	540
CACAGTGCTC TAACTGAAA TGTGAAGTT ACTAAGTTGT AGGTAACATC GACTGTTTGG	600
GGTTGTAT	608

(2) INFORMATION FOR SEQ ID NO: 127:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 269 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA  
 (iii) HYPOTHETICAL: NO  
 (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 127:

AACGAAAGAT TGACGATTGG TAAGAATCCA CGACAAGTTG TTCTTCATAG ATGTATCTGA	60
GGGTCTGTAG CTCAGTTGGT TAGAGCACAC GCTTGATAAG CGTGGGGTCA CAAGTTCAAG	120
TCTTGTCAGA CCCACCATGA CTTTGACTGG TTGAAGTTAT AGAAAAGAAG ATACATAACT	180
GATGATGTAA GCTGGGGACT TAGCTTAGTT GGTAGAGCGC CTGCTTTGCA CGCAGGAGGT	240
CAGGAGTTCG ACTCTCCTAG TCTCCACCA	269

(2) INFORMATION FOR SEQ ID NO: 128:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 249 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 128:

AACGAAAGAT TGATGGCCGG TAAGAATCCA CAACAAGTTG TTCTTGAAG ATGTATCTGA	60
GGGTCTGTAG CTCAGTTGGT TAGAGCACAC GCTTGATAAG CGTGGGGTCA CAAGTTCAAG	120
TCTTGTCAGA CCCACCAAAT CTGAAAGATA TGTCGTTTCA TATGATTAAA GCTGGGGACT	180
TAGCTTAGTT GGTAGAGCGC CTGCTTTGCA CGCAGGAGGT CAGGAGTTCG ACTCTCCTAG	240
TCTCCACCA	249

(2) INFORMATION FOR SEQ ID NO: 129:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 283 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 129:

AACGAAAGAT TGACGATTGG TAAGAATCCA CAACAAGTTG TTCTTCATGA CGATGTATCT	60
GAGGGTCTGT AGCTCAGTTG GTTAGAGCAC ACGCTTGATA AGCGTGGGGT CACAAGTTCA	120
AGTCTTGTC GACCCACCAA ATCTGACTAA CAAGCATTAT TAAATGCTGA ATACAGAAAA	180
ACAGAGACAT TGAATTATTG ATAAGCTGGG GACTTAGCTT AGTTGGTAGA GCGCCTGCTT	240
TGCACGCAGG AGGTCAGGAG TTCGACTCTC CTAGTCTCCA CCA	283

(2) INFORMATION FOR SEQ ID NO: 130:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 283 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 130:

AACGAAAGAT TGGTGACCGG TAAGAATCCA CAACAAGTTG TTCTTCGAAG ATGTATCTGA	60
GGGTCTGTAG CTCAGTTGGT TAGAGCACAC GCTTGATAAG CGTGGGGTCA CAAGTTCAAG	120
TCTTGTCAGA CCCACCACTA CTGACGAAGT GATGAATAAT CACAAGCTGC TAGATGAAAA	180
GATATGTCGT TCATTATGAT TAAAGCTGGG GACTTAGCTT AGTTGGTAGA GCGCCTGCTT	240
TGCACGCAGG AGGTCAGGAG TTCGACTCTC CTAGTCTCCA CCA	283

## (2) INFORMATION FOR SEQ ID NO: 131:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 808 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 131:

TAAGGAAGAT CGAGAATTGG AAAGAGGTCG GATTTATCCG GATGATCCTT CTCCATCTTA	60
TTAGAACATA GATCGCAGGC CAGTCAGCCT GACGATCGCT TGCAGGCGTG CCGCCTTCGT	120
TTCTCTTTCT TCATTGTTGA TTGCTCACGG GCCGTACCGC AGCTGACGCT GCTGGCCCTG	180
CGCAGGCGCG GCCCATCAGG GCCGACGGCC GGTGGCCCTT GCNAAGCTTC GCTTCGGGGT	240
GGATCTGTGG ATCGCGTAGT AGCGTTTGCG TCGGTATCTG GGCTTGTAGC TCAGTTGGTT	300
AGAGCACACG CTTGATAAGC GTGGGGTCGG AGGTTCAAGT CCTCCCAGGC CCACCAAGTT	360
ACTTGATGAG GGGCCGTAGC TCAGCTGGGA GAGCACCTGC TTTGCAAGCA GGGGGTCGTC	420
GGTTCGATCC CGTCCGGCTC CACCATCATG TTGGTGTGA GACGGATATT GGCAATCAAC	480
AAAAGAAAGA AACAAGTTG CGGACTNTTA CGAAAGTCTG CCTGTTCTGT ATGAAATCGT	540
GAAGAGAAGA TGTAATCGGA TCAACTGAAG AGTTGATGTC GCAAGAAGCT TGCTCAAGCC	600
TTGCATAATG ATTGATGTGT TTAACCGCCA TCACCGATTG TATCTCGAGA AGCTGGTCTT	660
TCTGCTGATA CTGTTGAAAC GAGCATTTCG AGTCGAATGG CAACATTTCG CGTCGCATAA	720
TGCGGCTTTA AGAGCTGAGT TTTGATGGAT ATTGGCAATG AGAGTGATCA AGTGTCTTAA	780
GGGCATTGGT GGATGCCTTG GCATGCAC	808

## (2) INFORMATION FOR SEQ ID NO: 132:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 808 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear



(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 132:

TAAGGAGGAT CGAGAATTGG AAAGAGGCCG GATTATCCG GATGATCCTT CTCCATCTTA	60
TTAGAACATA GATCGCAGNC CAGTCAGCCT GACGATCGCT TGCAGGCGTG CCGCCTTCGT	120
TTCTCTTTCT TCATTGTTGA TTGCTCACGG GCCGTACCGC AGCTGACGCT GCTGGCCCTG	180
CGCAGGCGCG GNCCATCAGG GCCGACGGCC GGTCGGCCTT GCGAAGCTTC GCTTCGGGGT	240
GGATCTGTGG ATCGCGTAGT AGCGTTTGCG TCGGTATCTG GGCTTGTAGC TCAGTTGGTT	300
AGAGCACACG CTTGATAAGC GTGGGGTCCG AGGTTCAAGT CCTCCCAGGC CCACCAAGTT	360
ACTTGATGAG GGGCCGTAGC TCAGCTGGGA GAGCACCTGC TTTGCAAGCA GGGGGTGGTC	420
GGTTGCATCC CGTCCGGCTC CACCATCATG TTGGTGTGA GACGGATATT GCGAATCAAC	480
AAAAGAAAGA AACAAAGTTG CGGACTNTTA CGAAAGTCG CCTGTTCTGT ATGAAATCGT	540
GAAGAGAAGA TGTAATCGGA TCAACTGAAG AGTTGATGTC GCGAGAAGCT TGCTCAAGCC	600
TTGCATAATG ATTGATGTGT TTAACCGGCA TCACCGATTG TATCTCGAGA AGCTGGTCTT	660
TCTGCTGATA CTGTTGAAAC GAGCATTTCG AGTCGAATGG CAACATTCCG CCGCGCATTA	720
TGCGGCTTTA AGAGCTGAGT TTTGATGGAT ATTGGCAATG AGAGTGATCA AGTGCTCTTA	780
GGGCATTGGT GGATGCCTTG GCATGCAC	808

(2) INFORMATION FOR SEQ ID NO: 133:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 353 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 133:

CCTTAAAGAA CTGTTCTTTG CAGTGCTCAC ACAGATTGTC TGATGAAAAG TAAATAGCAA	60
GGCGTCTTGC GAAGCAGACT GATACGTCCC CTTCTCTAG AGGCCCAGGA CACCGCCCTT	120
TCACGGCGGT AACAGGGGTT CGAATCCCTT AGGGGACGCC ACTTGCGCGG TAAATGTGA	180
AAGCGTTGCC ATCAGTATCT CAAAAGTAC TTACGAGTCA CGTTTGAGAT ATTTGCTCTT	240
TAAAAATCTG GATCAAGCTG AAAATTGAAA CACAGAACAA CGAAAGTTGT TCGTGAGTCT	300

CTCAAATTTT CGCAACACGA TGATGAATCG TAAGAAACAT CTCGGGTTG TGA

353

(2) INFORMATION FOR SEQ ID NO: 134:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 515 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 134:

CCTTAAAGAA CTGTTCTTTG CAGTGCTCAC ACAGATTGTC TGATGAAAAA CGAGCAGTAA	60
AACCTCTACA GGCTTGTAGC TCAGGTGGTT AGAGCGCACC CCTGATAAGG GTGAGGTCGG	120
TGGTTCAAGT CCACTCAGGC CTACCAAATT TTCCCTGAAT ACTGCGTTGT GAAATAACTC	180
ACATACTGAT GTATGCTTCG TTATCCACG CCTTGTCTCA GGAAAAATTA TCGGTAAAGA	240
GGTTCCTGACT ACACGATGGG GCTATAGCTC AGCTGGGAGA GCGCCTGCTT TGCACGCAGG	300
AGGTCTGCGG TTCGATCCCG CATAGCTCCA CCATATCGTG AGTGTTTACG AAAAAATACT	360
TCAGAGTGTA CCTGAAAGGG TTCACTGCGA AGTTTGTCTC TTAAAAATC TGGATCAAGC	420
TGAAAATTGA AACACAGAAC AACGAAAGTT GTTCGTGAGT CTCTCAAATT TTCGCAACAC	480
GATGATGAAT CGTAAGAAAC ATCTTCGGGT TGTGA	515

(2) INFORMATION FOR SEQ ID NO: 135:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 353 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 135:

CCTTAAAGAA GCGTACTTTG CAGTGCTCAC ACAGATTGTC TGATGAAAAG TAAATAGCAA	60
GGCGTCTTGC GAAGCAGACT GATACGTCCC CTCGTCTAG AGGCCAGGA CACCGCCCTT	120
TCACGGCGGT AACAGGGGTT CGAATCCCCT AGGGGACGCC ACTTGCGCGG TAATGTGTGA	180
AAGCGTTGCC ATCAGTATCT CAAACTGAC TTACGAGTCA CGTTTGAGAT ATTTGCTCTT	240
TAAAAATCTG GATCAAGCTG AAAATTGAAA CACAGAACAA CGAAAGTTGT TCGTGAGTCT	300
CTCAAATTTT CGCAACACGA TGATGAATCG TAAGAAACAT CTCGGGTTG TGA	353

(2) INFORMATION FOR SEQ ID NO: 136:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 481 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 136:

CCTTAAAGAA CTGTTCTTTG AAGTGCTCAC ACAGATTGTC TGATGAAAAA CGAGCAGTAA	60
AACCTCTACA GGCTTGTAGC TCAGGTGGTT AGAGCGCACC CCTGATAAGG GTGAGGTCGG	120
TGGTTCAAGT CCACTCAGGC CTACCAAATT TTCCCTGAAT ACTGCGTTGT GAAATAACTC	180
ACATACTGAT GTATGCTTCG TTATTCCACG CCTTGTCTCA GGAAAAATTA TCGGTAAAGA	240
GGTTCTGACT ACACGATGGG GCTATAGCTC AGCTGGGAGA GCGCCTGCTT TGCACGCAGG	300
AGGTCTGCGG TTCGATCCCG CATAGCTCCA CCATCTCGTG AGTGTTTACG AAAAAATACT	360
TCAGAGTGTA CCTGAAAGGG TTCACTGCGA AGTTTGTCTC TTAAAAATC TGGATCAAGC	420
TGAAAAATTGA AACACAGAAC AACGAAAGTT GTTCGTGAGT CTCTCAAAT TTGCAACAC	480
	481

(2) INFORMATION FOR SEQ ID NO: 137:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 392 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 137:

CCTTAAAGAA GCGTACTTTG AAGTGCTCAC ACAGATTGTC TGATGAAAAG TGAATAGCAA	60
GGCGTCTTGC GATTGAGACT TCAGTGTCCC CTTCGTCTAG AGGCCAGGA CACCGCCCTT	120
TCACGGCGGT AACAGGGGTT CGAATCCCCT AGGGGACGCC AGCGTTCAAA CTGATGAGGT	180
CAAACCTCCA GGGACGCCAC TTGCTGGTTT GTGAGTGAAA GTCACCTGCC TTAATATCTC	240
AAACTGACT TACGAGTCAC GTTTGAGATA TTTGCTCTTT AAAAACTGG ATCAAGCTGA	300
AAATTGAAAC ACAGAACAAC GAAAGTTGTT CGTGAGTCTC TCAAATTTTC GCAACACGAT	360

GATGAATCGT AAGAAACATC TTCGGGTTGT GA

392

## (2) INFORMATION FOR SEQ ID NO: 138:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 515 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 138:

CCTTAAAGAA ACGGTCTTTG AAGTGCTCAC ACAGATTGTC TGATGAAAAA CGAGCAGTAA	60
AACCTCTACA GGCTTGTAGC TCAGGTGGTT AGAGCGCACC CCTGATAAGG GTGAGGTCGG	120
TGGTTCAAGT CCACTCAGGC CTACCAAATT TTCCCTGAAT ACTGCSTTGT GAAATAACTC	180
ACATACTGAT GTATGCTTCG TTATTCCACG CCTTGTCTCA GGAAAAATTA TCGGTAAAGA	240
GGTTCTGACT ACACGATGGG GCTATAGCTC AGCTGGGAGA GCGCCTGCTT TGCACGCAGG	300
AGGTCTGCGG TTCGATCCCG CATAGCTCCA CCATCTCGTG AGTGTTTACG AAAAAATACT	360
TCAGAGTGTA CCTGAAAGGG TTCACTGCCA AGTTTTGCTC TTTAAAAATC TGGATCAAGC	420
TGAAAATTGA AACACAGAAC AACGAAAGTT GTTCGTGAGT CTCTCAAATT TTCGCAACAC	480
GATGATGAAT CGTAAGAAAC ATCTTCGGGT TGTA	515

## (2) INFORMATION FOR SEQ ID NO: 139:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 365 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 139:

CTAAGGATAT ATTCGGAACA TCTTCTTCGG AAGATGCGGA ATAACGTGAC ATATTGTATT	60
CAGTTTTGAA TGTTTATTTA ACATTCAAAT ATTTTTTGGT TAAAGTGATA TTGCTTTTGA	120
AAATAAAGCA GTATGCGAGC GCTTGACTAA AAAAAATTGT ACATTGAAAA CTAGATAAGT	180
AAGTAAATA TAGATTTTAC CAAGCAAAC CGAGTGAATA AAGAGTTTAA AATAAGCTTG	240
AATTCATAAG AAATAATCGC TAGTGTTTCA AAGAACACTC ACAAGATTAA TAACGCGTTT	300
AAATCTTTTT ATAAAAGAAC GTAAC TTCAT GTTAACGTTT GACTTATAAA AATGGTGGA	360

ACATA

365

## (2) INFORMATION FOR SEQ ID NO: 140:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 548 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 140:

CTAAGGATAT ATTCGGAACA TCTTCTTCAG AAGATGCGGA ATAACGTGAC ATATTGTATT 60  
CAGTTTTGAA TGTTTATTTA ACATTCAAAT ATTTTTTGGT TAAAGTGATA TTGCTTATGC 120  
GAGCNCCTGA CAATCTATTC TTTTAAAGA AAGCGGTGT CAGACAATGC ATTAAGAAAA 180  
ATTAAAGCGG AGTTTACTTT TGTAATGAG CATTTGATTT TTTGAAAATA AAGCAGTATG 240  
CGAGCGCTTG ACTAAAAGA AATTGTACAT TGAAACTAG ATAAGTAAGT AAAATATAGA 300  
TTTACCAAG CAAAACCGAG TGAATAAGA GTTTAAATA AGCTTGAATT CATAAGAAAT 360  
AATCGCTAGT GTTCGAAAGA ACACTCACA GATTAATAAC GCGTTTAAAT CTTTTATAA 420  
AAGAAAACGT TTAGCAGACA ATGAGTTAAA TTATTTTAAA GCAGAGTTTA CTTATGTAAA 480  
TGAGCATTTA AAATAATGAA AACGAAGCCG TATGTGAGCA TTTGACTTAT AAAAATGGTG 540  
GAAACATA 548

## (2) INFORMATION FOR SEQ ID NO: 141:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 471 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 141:

CTAAGGATAT ATTCGGAACA TCTTCTTCAG AAGATGCGGA ATAACGTGAC ATATTGTATT 60  
CAGTTTTGAA TGTTTATTTA ACATTCAAAT ATTTTTTGGT TAAAGTGATA TTGCTTATGC 120  
GAGCGCTTGA CAATCTATTC TTTTAAAGA AAGCGGTGT CAGACAATGC ATTAAGAAAA 180  
ATTAAAGCGG AGTTTACTTT TGTAATGAG CATTTGATTT TTTGAAAATA AAGCAGTATG 240

CGAGCGCTTG ACTAAAANGA AATTGTACAT TGAAACTAG ATAAGTAAGT AAAATATAGA 300  
 TTTTACCAAG CAAAACCGAG TGAATAAAGA GTTTTGAATA AGCTTGAATT CATAAGAAAT 360  
 AATCGCTAGT GTTCGAAAGA ACACTCACAA GATTAATAAC GCGTTTAAAT CTTTTTATAA 420  
 AAGAACGTAA CTTTCATGTTA ACGTTTGACT TATAAAAATG GTGGAAACAT A 471

(2) INFORMATION FOR SEQ ID NO: 142:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 383 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 142:

CTAAGGATAT ATTCGGAACA TCTTCTTCAG AAGATGCGGA ATAACGTGAC ATATTGTATT 60  
 CAGNTTTGAA TGTTTATTTA ACATTCAAAA AATGGGCCTA TAGCTCAGCT GGTTAGAGCG 120  
 CACGCCTGAT AAGCGTGAGG TCGGTGGTTC GAGTCCACTT AGGCCCACCA TTATTGTAC 180  
 ATTGAAACT AGATAAGTAA GTAAAATATA GATTTTACCA AGCAAAACCG AGTGAATAAA 240  
 GAGTTTTTAAA TAAGCTTGAA TTCATAAGAA ATAATCGCTA GTGTTGAAA GAACACTCAC 300  
 AAGATTAATA ACGCGTTTAA ATCTTTTAT AAAAGAACGT AACTTCATGT TAACGTTTGA 360  
 CTTATAAAAA TGGTGGAAC ATA 383

(2) INFORMATION FOR SEQ ID NO: 143:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 351 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 143:

CTAAGGATAT ATTCGGAACA TCTTCYTCAG AAGATGCGGA ATAATGTGAC ATATTGTATT 60  
 CAGTTTTGAA TGTTTATTTA ACATTCAAAT ATTTTGGT TAAAGTGATA TTGCTTATGC 120  
 GAGCGCTTGA CTAAAAGAA ATTGTACATT GAAACTAGA TAAGTAAGTA AAANTATAGA 180  
 TTTTACCAAG CAAAACCGAG TGAATAAAGA GTTTTAAATA AGCTTGAATT CATAAGAAAT 240  
 AATCGCTAGT GTTCGAAAGA ACACTCACAA GATTAATAAC GCGTTTAAAT CTTTTTATAA 300

165  
AAGAACGTAA CTTTCATGTTA ACGTTTGACT TATAAAAATG GTGGAAACAT A

351

(2) INFORMATION FOR SEQ ID NO: 144:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 263 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 144:

CTAAGGATAT ATTCGGAACA TCTTCTACGA AGATGAGGGA ATAACGTGAC ATATTGTATT	60
CAGTTTTGAA TGTTTATTAA CATTCAATTG TACATTGAAA ACTAGATAAG TAAGTAAGAT	120
TTTACCAAGC AAAACCGAGT GAATAGAGTT TTAATAAGC TTGAATTCAT AAATAATCGC	180
TAGTGTTCGA AAGACNTCCA CAAGATTAAT AACTAGTTTT AGCTATTTAT TTTGAATAAC	240
AATTCAAAAT ATGGTGGGAC ATA	263

(2) INFORMATION FOR SEQ ID NO: 145:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 247 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 145:

AAGGATAAGG AACTGCACAT TGGTCTTGTT TAGTCTTGAG AGGTCTTG TG GGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGC GGTTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAA CGCTGTAGTA TTAATAAAGA GTTTATGACT GAAAGGTCAA	240
AAAATAA	247

(2) INFORMATION FOR SEQ ID NO: 146:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 375 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 146:

AAGGAAATGG AACACGTTTA TCGTCTTATT TAGTTTGTAG AGGTCTTG TG GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTNGCACGCA GGAGGTCAGC GGTCGATCC CGCTAGGCTC	120
CATCAGGATA CANTCCTACT AAACCTTAATA CAAGTGAAGT TGAACACGCA ACTCACTTCC	180
TAGGAAAATA GACAATCTTC GCTTGTGTGC AAGGCACACA TGGTCAGATT CCTAATTTTC	240
TACAGAAGTT TCGCTAAAGC GAGCGTTGCT TAGTATCCTA TATAATAGTC CATNGAAAAT	300
TGAATATCTA TATCAAATTC CACGATCTAG AAATAGATTG TGGAAACGTA ACAAGAAATT	360
AACCCGNAAA CGCTG	375

(2) INFORMATION FOR SEQ ID NO: 147:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 244 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 147:

AAGGATAAGG AACTGCACAT TGGTCTTGTT TAGTCTTGAG AGGTCTTG TG GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTGACACGCA GGAGGTCAGC GGTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAC GCTGTAGTAT TAAAAGAGTT TATGACTGAA AGGTCAGAAA	240
ATAA	244

(2) INFORMATION FOR SEQ ID NO: 148:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 284 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO



## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 148:

CTAAGGATAT ATTCGGAACA TCTTCTTACG AAGATGCAGG AATAACATTG ACATATTGTA	60
TTCAGNTGTG AATGCTCATT GGAGNATTCA TNGCATNATT TGGTNCATTG ACANCTAGAT	120
AAGNAAGTAA AATTTATGAT TTTACCAAGC AAAACCGAGT GAATTAGAGT TNTNNAACAA	180
GCTTTGATTT CAAAAAGAAA TAATCGCTAG TGTTGAAAG AACACTCACA GATTANTAAC	240
ATCTTGGGTT TTCACCCGAC TTGTTCTGNT CGAAAGTCAA AAAA	284

## (2) INFORMATION FOR SEQ ID NO: 149:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 246 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 149:

AAGGATAAGG AACTGCGCAT TGGTCTTGTT TAGTCTTGAG AGGTCTTGTT GGGCCTTAGC	60
TCAGCTGGGA GAGCGCTGC TTTGCACGCA GGAGGTCAGC GGTTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAA CGCTGTAGTA TTAATAAGAG TTTATGACTG AAAGGTCAAA	240
AAATAA	246

## (2) INFORMATION FOR SEQ ID NO: 150:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 247 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 150:

AAGGATAAGG AACTGCGCAT TGGTCTTGTT TAGTCTTGAG AGGTCTTGTT GGGCCTTAGC	60
TCAGCTGGGA GAGCGCTGC TTTGCACGCA GGAGGTCAGC GGTTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAA CGCTGTAGTA TTAATAAGAG TTTATGACTG AAAGGTCAGA	240

AAAATAA

247

(2) INFORMATION FOR SEQ ID NO: 151:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 247 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 151:

AAGGAAAAGG AACTGCGCAT TGGTCTTGTT TAGTCTTGAG AGGTCTTGTT GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGC GGTTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAA CGCTGTAGTA TTAATAAGAG TTTATGACTG AAAGGTCAGA	240
AAAATAA	247

(2) INFORMATION FOR SEQ ID NO: 152:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 244 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 152:

AAGGATAAGG AACTGCGCAT TGGTCTTGTT TAGTCTTGAG AGGTCTTGTT GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGC GGTTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAC GCTGTAGTAT TAAAAGAGTT TATGACTGAA AGGTCAGAAA	240
ATAA	244

(2) INFORMATION FOR SEQ ID NO: 153:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 243 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 153:

AAGGATAAGG AACTGCGCAT TGGTCTTGTT TAGTCTTGAG AGGTCTTG TG GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGC GGTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAC GCTGTAGTAT TAAAAGAGTT TATGACTGAA AGGTCAAAAA	240
TAA	243

(2) INFORMATION FOR SEQ ID NO: 154:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 909 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 154:

TAAGGAAGAT CGAGAATTGG AAAGAGGTCG GATTTATCCG GATGATCCTT CTCCATCTTA	60
TTAGAACATA GATCGCAGGC CAGTCAGCCT GACGATCGCT TGCAGGCGTG CCGCCTTCGT	120
TTCTCTTTCT TCATTGTTGA TTGCTCACGG GCCGTACCGC AGCTGACGCT GCTGGCCCTG	180
CGCAGGCGCG GCCCATCAGG GCCGAACGGC CGGTCGGCCT TGCNAAGCTT CGCTTCGGGG	240
TGGATCTGTG GATCGCGTAG TAGCGTTTGC GTCGGTATCT GGGCTTGTAG CTCAGTTGGT	300
TAGAGCACAC GCTTGATAAG CGTGGGGTCG GAGGTTCAAG TCCTCCCAGG CCCACCAAGT	360
TACTTGATGA GGGGCCGTAG CTCAGCTGGG AGAGCACCTG CTTTGCAAGC AGGGGGTCGT	420
CGGTTGATC CCGTCCGGCT CCACCATCAT GTTGGTGTG AGACGGATAT TGGCAATCAA	480
CAAAAGAAAG AAACAAGTTT GCGGACTNNT ACGAAAGTCT GCCTGTTCTG TATGAAATCG	540
TGAAGAGAAG ATGTAATCGG ATCAACTGAA GAGTTGATGT CGCAAGAAGC TTGCTCAAGC	600
CTTGCCATAAT GATTGATGTG TTTAACCGCC ATCACCGATT GTATCTCGAG AAGCTGGTCT	660
TTCTGCTGAT ACTGTTGAAA CGAGCATTTG CAGTCGAATG GCAACATTCG GCGTCGCATA	720
ATGCGGCTTT AAGAGCTGAG TTTTGATGGA TATTGGCAAT GAGAGTGATC AAGTGTCTTA	780
AGGGCATTGG TGGATGCCTT GGCATGCAC	809

(2) INFORMATION FOR SEQ ID NO: 155:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 23 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 155:

TGGGGTGAAG TCGTAACAAG GTA

23

(2) INFORMATION FOR SEQ ID NO: 156:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 21 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 156:

CCTTTCCCTC ACGGTACTGG T

21

(2) INFORMATION FOR SEQ ID NO: 157:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 277 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 157:

AAGGAGCACC ACGAGAAACA CTCCAATTGG TGGGGTGTA GCGGTGAGGG GTTCTCGTCT 60  
 GTAGTGGACG GAAGCCGGGT GCACAACAAC AAGCAAGCCA GACACACTAT TGGGTCCTGA 120  
 GGCAACATCT CTGTTGGTTT CGGGATGTTG TCCCACCATC TTGGTGGTGG GGTGTGGTGT 180  
 TTGAGAATTG GATAGTGGTT GCGAGCATCA ATTGGATGCG CTGCCTTTTG GTGGCGTGT 240  
 CTGTTGTGCA ATTTTATTCT TTGGTTTTTG TGTTTAT 277

(2) INFORMATION FOR SEQ ID NO: 158:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 286 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 158:

AAGGAGCACC ACGAGAAACA CCCCAATTGG TGGGGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AGGGCCGGGT GCACAACAAC AGGCAATCGC CGGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGCCGACT GAGGTCGACG TGGTGTCCCT CCATCTTGGT GGTGGGGTGT	180
GGTGTTTGAG CATTGAATAG TGGTTGCGAG CATCTAGCCG GATGCGTTCC CCAGTGGTGC	240
GCGTTCGTCA AAAATGTGTA ATTTTCTTT TGGTTTTTGT GTTCGT	286

(2) INFORMATION FOR SEQ ID NO: 159:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 296 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 159:

AAGGAGCACC ACGAGAAACA CCCCAATTGG TGGGGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AGGGCCGGGT GCACAACAAC AGGCAATCGC CGGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGCCGACT GAGGTCGACG TGGTGTCCCT CCATCTTGGT GGTGGGGTGT	180
GGTGTTTGAG CATTGAATAG TGGTTGCGAG CATCTAGACG GATGCGTTCC CCAGTGGTGC	240
GCGTTCGTCA AAAATGTGTA ATTTTCTTT TGGTTTTTGT GTTCGT	286

(2) INFORMATION FOR SEQ ID NO: 160:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 279 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 160:

AAGGAGCACC ACGAGAAACA CCCCAATTGG TGGGGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AGGCGGGTAC AACACGCCA ATCGCCGGAC AACTATTGG GCCTGAGACA	120
AACTCGGCC GACTGAGGTC GACGTGGTGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGCATTGA ATAGTGGTTG CGAGCATCTA GCCGGATGCG TTCCCCAGTG GTGCGCGTTC	240
GTCAAAAATG TGTAAATTTT CTTTGGTTTT TGTGTTCTG	279

(2) INFORMATION FOR SEQ ID NO: 161:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 288 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 161:

AAGGAGCACC ACGAGAAACA CTCCAATTGG TGGAGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AGGGCCGGGT GCACAACAGC AGACAATCGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGCCGACT TTGGTCGACG TGGTGTCCCT CCATCTTGGT GGTGGGGTGT	180
GGTGTTTGAG CATTGAATAG TGGTTGCGAG CATCTAGACG GATGCGTTGC CCTCGGGCCG	240
CGTGTTCTGTC AAAAATGTGT AATTTTTTCT TTTGGTTTTT GTGTTCTG	288

(2) INFORMATION FOR SEQ ID NO: 162:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 289 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 162:

AAGGAGCACC ACGAGAAACA CTCCAATTGG TGGAGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG GGAGCCGGGT GCACAACAAC AGGCAATCGC CAGACACACT ATTGGGCCCT	120

GAGACAACAC TCGGCCGGCT TTGAGTCGAA GTGGTGTCCC TCCATCTTGG TGGTGGGGTG 180  
 TGGTGTTTGA GCATTGAATA GTGGTTGCGA GCATCTAGAC GGATGCGTTG CCTTCGGGCC 240  
 GCGTGTTCGT CAAAAATGTG TAATTTTTTC TTTTGGTTTT TGTGTTCGT 289

(2) INFORMATION FOR SEQ ID NO: 163:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 232 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 163:

AGGGAGCACC GAAACGCATC CCGCGTGGGG TGTGGGTTCC GCGTGTGTG GCGTCGGCCG 60  
 AGGTGTTGGG CAGCAGGCAG TAACCCCGGA ACACTGTTGG GTTTTGAGAA CACCCGTGGT 120  
 GGTGTTGTGC TCCCCGTGGT GCGGGGTGTG GTGTTTGAGT GTTGGATAGT GGTTCGAGC 180  
 ATCTGGCAAA GACTGTGGTA AGCGGTTTTT GTTGATGTTT TCTGGTGTGT GT 232

(2) INFORMATION FOR SEQ ID NO: 164:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 279 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 164:

AAGGAGCACC ACGAGAAACA CTCCAATTGG TGGGGTGTGA GCCGTGAGGG GTTCTCGTCT 60  
 GTAGTGGACG AGGGCGGGTG CACAACAACA GCAATCGCCA GACACACTAT TGGCCCTGAG 120  
 ACAACACTCG GCCGACTTGG TTGAAGTGGT GTCCCTCCAT CTTGGTGGTG GGGTGTGGTG 180  
 TTTGAGTATT GGATAGTGGT TGCGAGCATC TAATGAACGC GTCGCCGCAA CGGTTACGTG 240  
 TTCGTTTTGT GTAATTTTTT TATTGGTTTT TGTGTTCGT 279

(2) INFORMATION FOR SEQ ID NO: 165:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 285 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 165:

AAGGAGCACC ACGAGAAACA CTCCAATTGG TGGGGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AGGGCCGGGT GCACAACAAC AGGCAATCGC CAGACACACT ATTGGCCCTG	120
AGACAACACT CGGCCGACTT TGGTCGAAGT GGTGTCCCCC CATCTTGGTG GTGGGGTGTG	180
GTGTTTGAGT ATTGGATAGT GGTGCGAAC ATCTAAATGA ACGCGTTGCC GGCAACGGTT	240
ACGTGTTTCGT TTTAGTGTA TTTTCTAAT GGTTTTGTG TTCGT	285

(2) INFORMATION FOR SEQ ID NO: 166:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 384 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 166:

AAGGAGCACC ACGAGACCTG GGCCGGCCCC GCAGATCGCG GGATCAGCTG AGCTTTCAGG	60
CGATTGCTTG GATGGCCTCG CACCTGTAGT GGGTGGGGT CTGGTGCCT CAACAACTT	120
GGCGTGGGAT GCGGGAAGC ATCTGCGGAA AATCATCAGA CACACTATTG GGCTTTGAGA	180
CAACAGGCCC GCAGCCTGCC CGTTGGGGC AGGGGTGTGT TGTGCTCA CTTTGGTGGT	240
GGGGGTGGTG TTTGATTTGT GGATAGTGGT TCGGAGCATC TAGCGCGCAG AATGTGTGGT	300
CTCACTCCTT GTGGGTGGGG CCTGGTTTTG TGTGCGATTG ATGTGCAATT TCTTTTGAAA	360
CTCATTTTTT GGTTTTGTG TTGT	384

(2) INFORMATION FOR SEQ ID NO: 167:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 295 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO



## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 167:

AAGGAGCACC ACGAAAACT CCCCAATTGG TGGGGTGTA GCGGTGAGGG GTTCCCGTCT	60
GTAGTGGACG GGGGCCGGGT GCGCAACAGC AAGCGAAACG CCGGACACAC TATTGGGTCC	120
TGAGGCAACA CTCGGGTTTG TCCCCCTCAG GGATTTTCTG GGTGTTGTCC CACCATCTTG	180
GTGGTGGGGT GTGGTGTGTT AGAATTGGAT AGTGGTTGCG AGCATCAAAT GGATGCGTTG	240
CCCCTACGGG TAGCGTGTTC TTTTGTGCAA TTTTATTCTT GGTTTTGTG TTTGT	295

## (2) INFORMATION FOR SEQ ID NO: 168:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 279 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 168:

AAGGAGCACC ACGAGAAGCA CTCCAAGTGG TGGGGTGCAA GCGGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AGAGCCGGGT GCGCGACAAC GAACGAGCCA GACACACTAT TGGGTCCTGA	120
GGCAACACTC GGGCTTGGCC AGAGCTGTTG TCCCACCATC TTGGTGGTGG GGTGTGGTGT	180
TTGAGAATTG GATAGTGGTT GCGAGCATCA AATGGATGCG TTGCCCCCTAC GGGTGGCGTG	240
TTCTTTTGTG CAATTTTATT CTTTGGTTTT TGTGTTTGT	279

## (2) INFORMATION FOR SEQ ID NO: 169:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 286 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 169:

AAGGAGCACC ACGAAAAACA CCCCAACTGG TGGGGTGTA GCGGTGAGGG GCTCCCGTCT	60
GTAGTAGACG GCGCGCCGGT GCGCAACAGC AAGCGAGCCA GACACACTAT TGGGTCCTGA	120
GGCAACACTC GGGCTTGTCT TGGACTCGTC CAAGAGTGTT GTCCCACCAT CTTGGTGGTG	180
GGGTGTGGTG TTTGAGAATT GGATAGTGGT TGCGAGCATC ACTGGATGCG TTGCCCCAG	240

GGGTAGCGTG TTCTTTTGTG CAATTTATTC TGGTTTTTGT GTTAGT

286

## (2) INFORMATION FOR SEQ ID NO: 170:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 265 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 170:

AAGGAGCACC ACGAAAAACA CTCCGCATCC GGTGGGGTGT GAGCCGTGAG GGAGCCCGTG	60
CCTGTAGTGG GTGTGGGTTG GGTGCCGAC AACAAATGGG AAAAATCGCT GGGCACACTA	120
TTGGGCTTTG AGGCAACACC TGGTTTGTTT TGGGTGGTGT CGCTCCATCT TGGTGGTGGG	180
GTGTGGTGTG TGAGTTGTGG ATAGTGTTG CGAGCATCTA AGCAAAAGCT GTTGTTTGAC	240
GGTTTTTGTC GAGTGTGTG TGTGT	265

## (2) INFORMATION FOR SEQ ID NO: 171:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 299 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 171:

AAGGAGCACC ACGAAAAACA CTCCAATTGG TGGGGTGTA GCCGTGAGGG GTTCTCATCT	60
GTAGTGGACG AGAGCCGGGT GCACAACAGC AAATGAATCG CCAGACACAC TGTGGGGTCC	120
TGAGGCAACA CTCAGGCTTG TCCCATGTTG GGCTTGATCG GGTGCTGTCC CCCCATCTTG	180
GTGGTGGGGT GTGGTGTGTT AGTATTGGAT AGTGGTTGCG AGCATCTAAA TGGATACGTT	240
GCCAGTAATG GTGGCGTATT CATTGAAAAT GTGTAATTTT CTTCTTTGGT TTTGTGTGT	299

## (2) INFORMATION FOR SEQ ID NO: 172:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 299 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 172:

AAGGAGCACC ACGAAAAACA CTCCAATTGG TGGGGTGTA GCGGTGAGGG GTTCTCATCT	60
GTAGTGGACG AGAGCCGGGT GCACAACAGC AAATGAATCG CCAGACACAC TGTGGGGTCC	120
TGAGGCAACA CTCAGGCTTG TCCCATGTTG GGCTTGATCG GGTGCTGTCC CCCCATCTTG	180
GTGGTGGGGT GTGGTGTGTT AGTATTGGAT AGTGGTTGCG AGCATCTAAA TGGATACGTT	240
GCCAGTAATG GTGGCGTGTT CATTGAAAAT GTGTAATTTT CTTCCTTGGT TTTGTGTGT	299

(2) INFORMATION FOR SEQ ID NO: 173:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 298 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 173:

AAGGAGCACC ACGAAAAACA CTCCAATTGG TGGGGTGTA GCGGTGAGGG GTTCTCATCT	60
GTAGTGGACG AGAGCCGGGT GCACAACAGC AAATGAATCG CCAGACACAC TGTGGGGTCC	120
TGAGGCAACA CTCAGGCTTG TCCCATGTTG GGCTTGATCG GGTGCTGTCC CCCCATCTTG	180
GTGGTGGGGT GTGGTGTGTT AGTATTGGAT AGTGGTTGCG AGCATCTAAA TGGAACGTTG	240
CCAGTAATGG TGGCGTGTTT ATTGAAAATG TGTAATTTT CTCTTTGGTT TTTGTGTGT	298

(2) INFORMATION FOR SEQ ID NO: 174:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 300 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 174:

AAGGAGCACC ATTTCTCAGT CGAATGAACT GAGAACATAA AGCGAGTATC TGTAGTGGAT	60
---	----

ACATGCTTGG TGAATATGTT TTATAAATCC TGTCCACCCC GTGGATAGGT AGTCGGCAAA	120
ACGTCGGACT GTCATAAGAA TTGAAACGCT GGCACACTGT TGGGTCCTGA GGCAACACAT	180
TGTGTTGTCA CCCTGCTTGG TGGTGGGGTG TGGTCCTTGA CTTATGGATA GTGGTTGCGA	240
GCATCTAAAC ATAGCCTCGC TCGTTTTTGA GTGAGGCTGG TTTTGTCAAT TTTATTAGCT	300

(2) INFORMATION FOR SEQ ID NO: 175:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 22 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 175:

GGTTTCGGGA TGTTGTCCCA CC

22

(2) INFORMATION FOR SEQ ID NO: 176:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 176:

CGACTGAGGT CGACGTGGTG T

21

(2) INFORMATION FOR SEQ ID NO: 177:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 27 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 177:

GGTGTGGGAG CATTGAATAG TGGTTGC

27

(2) INFORMATION FOR SEQ ID NO: 178:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 178:

GTTGGGACAGC AGGCAGTAAC C

21

(2) INFORMATION FOR SEQ ID NO: 179:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 179:

CCGGCAACGG TTACGTGTC

20

(2) INFORMATION FOR SEQ ID NO: 180:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 180:

TCGTTGGATG GCCTCGCACC T

21

(2) INFORMATION FOR SEQ ID NO: 181:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs

180

(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 181:

ACTTGCGGTG GGATCGGGG A

21

(2) INFORMATION FOR SEQ ID NO: 182:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 182:

CCCTCAGGGA TTTTCTGGGT GTTG

24

(2) INFORMATION FOR SEQ ID NO: 183:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 183:

GGACTCGTCC AAGAGTGTTG TCC

23

(2) INFORMATION FOR SEQ ID NO: 184:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

181

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 184:

TCGGGCTTGG CCAGAGCTGT T

21

(2) INFORMATION FOR SEQ ID NO: 185:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 185:

20

GGGTGCGCAA CAGCAAGCGA

(2) INFORMATION FOR SEQ ID NO: 186:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 186:

GATGCGTTGC CCCTACGGG

19

(2) INFORMATION FOR SEQ ID NO: 187:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 187:

CCCTACGGGT AGCGTGTCT TTTG

24

(2) INFORMATION FOR SEQ ID NO: 188:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 188:

CGGATCGATT GAGTGCTTGT CCC

23

(2) INFORMATION FOR SEQ ID NO: 189:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 189:

TCTAAATGAA CGCACTGCCG ATG

23

(2) INFORMATION FOR SEQ ID NO: 190:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 190:

TGAGGGAGCC CGTGCCTGTA

20

(2) INFORMATION FOR SEQ ID NO: 191:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 22 base pairs
  - (B) TYPE: nucleic acid



183  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 191:

CATGTTGGGC TTGATCGGGT GC

22

(2) INFORMATION FOR SEQ ID NO: 192:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 192:

20

CCTGGGTTTG ACATGCACAG

(2) INFORMATION FOR SEQ ID NO: 193:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 193:

GCGTAGTAGC GTTTCGCTCG G

21

(2) INFORMATION FOR SEQ ID NO: 194:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 194:

CGCAAGAAGC TTGCTCAAGC C

21

(2) INFORMATION FOR SEQ ID NO: 195:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 470 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 195:

CCTAATGATA TTGATTGCGG TGAAGTGCTC ACACAGATTG TCTGATGAAA AAGTAACGAG	60
CAGAAATACC TTTATAGGCT TGTAGCTCAG GTGGTTAGAG CGCACCCCTG ATAAGGGTGA	120
GGTCGGTGGT TCAAGTCCAC TCAGGCCTAC CACTTCTCGA AGTGGAAG GTACTGCACG	180
TGACTGTATG GGGCTATAGC TCAGCTGGGA GAGCGCCTGC CTTGCACGCA GGAGGTCAGC	240
GGTTCGATCC CGCTTAGCTC CACCATATAG TCCTGTATTT CAATACTTCA GAGTGTACTG	300
GCAACAGTAT GCTGCGAAGT ATTTTGCTCT TTAACAATCT GGAACAAGCT GAAAATTGAA	360
ACATGACAGC TGAAACTTAT CCCTCCGTAG AAGTATTGGG GTAAGGATTA ACCTGTCATA	420
GAGTCTCTCA AATGTAGCAG CACGAAAGTG GAAACACCTT CGGGTTGTGA	470

(2) INFORMATION FOR SEQ ID NO: 196:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 453 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 196:

CCTAATGATA TTGATTGCGG TGAAGTGCTC ACACAGATTG TTTGATAGAA ACGTAATGAG	60
CAAAAGCGCT ACCTGTTGAT GTAATGAGTC ACTGACTCAT GCTGATACGA ACCGATTAAG	120
ACAGTCAGTT TAATCGGATT TTCGTGTCCC CATCGTCTAG AGGCCTAGGA CACTGCCCTT	180

TCACGGCTGT AACAGGGGTT CGAATCCCTT TGGGGACGCC ATTCGATAAT GAGTGAAAGA	240
CATTATCACC GGTTCCTTGA ACCGAAAACA TCTTAAAGAT GACTCTTGCG AGTCGTGTTT	300
AAGATATTGC TCTTTAACAA TCTGGAACAA GCTGAAAATT GAAACATGAC AGCTGAAACT	360
TATCCCTCCG TAGAAGTATT GGGGTAAGGA TTAACCTGTC ATAGAGTCTC TCAAATGTAG	420
CAGCAGGAAA GTGGAAACAC CTTCCGGTTG TGA	453

(2) INFORMATION FOR SEQ ID NO: 197:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 248 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 197:

TAAGGATAAG GAAGAAGCCT GAGAAGGTTT CTGACTAGGT TGGGCAAGCA TTTATATGTA	60
AGAGCAAGCA TTCTATTTC A TTTGTGTTGT TAAGAGTAGC GCGGTGAGGA CGAGACATAT	120
AGTTGTGAT CAAGTATGTT ATTGTAAAGA AATAATCATG GTAACAAGTA TATTTACGC	180
ATAATAATAG ACGTTTAA GA GTATTTGTCT TTTAGGTGAA GTGCTTGCAT GGATCTATAG	240
AAATTACA	248

(2) INFORMATION FOR SEQ ID NO: 198:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 198:

GGAAAAGGTA CTGCACGTGA CTG	23
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(2) INFORMATION FOR SEQ ID NO: 199:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

186  
(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 199:

GACAGCTGAA ACTTATCCCT CCG

23

(2) INFORMATION FOR SEQ ID NO: 200:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 200:

GCTACCTGTT GATGTAATGA GTCAC

25

(2) INFORMATION FOR SEQ ID NO: 201:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 201:

GAGTAGCGCG GTGAGGACGA GA

22

(2) INFORMATION FOR SEQ ID NO: 202:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 202:

CTTTTATGTC AGATAAAGTA TGCAA

25

(2) INFORMATION FOR SEQ ID NO: 203:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 22 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 203:

CGTAAAAGGG TATGATTATT TG

22

(2) INFORMATION FOR SEQ ID NO: 204:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 204:

TCGAGAATTG GAAAGAGGTC

20

(2) INFORMATION FOR SEQ ID NO: 205:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 19 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 205:

AAGAGGTCGG ATTTATCCG

19

(2) INFORMATION FOR SEQ ID NO: 206:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 18 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- 188
- (ii) MOLECULE TYPE: cDNA
  - (iii) HYPOTHETICAL: NO
  - (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 206:

18

TTCGACTGCA AATGCTCG

(2) INFORMATION FOR SEQ ID NO: 207:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 19 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 207:

19

TCTTAAAGCC GCATTATGC

(2) INFORMATION FOR SEQ ID NO: 208:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 208:

20

CCTAATGATA TTGATTGCG

(2) INFORMATION FOR SEQ ID NO: 209:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 22 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 209:

ATGACAGGTT AATCCTTACC CC

22

(2) INFORMATION FOR SEQ ID NO: 210:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 25 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 210:

GGTGTGGTCC TTGACTTATG GATAG

25

(2) INFORMATION FOR SEQ ID NO: 211:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 211:

TCGGGCGCGG TGTTCGTCAA A

21

(2) INFORMATION FOR SEQ ID NO: 212:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 24 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 212:

CGTTTTTCATA AGCGATCGCA CGTT

24

(2) INFORMATION FOR SEQ ID NO: 213:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 235 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 213:

TAAGGATAAG GAAACCTGTG AATCTTTTTC CCTTCTTTTG TTCAGTTTTG AGAGGTTTCAT	60
CTCTCAAAAC GTGTTCTTTG AAAACTAGAT AAGAAAAGTT AGTGTAAGAA GACGAAGAGA	120
AACCGTAGGT TTTTCTTCAA CCAAACCGA GAATCAAACC GAGAAAGAAT CTTTCCGTTT	180
TCATAAGCGA TCGCACGTTT ATGAAAACAC AACAACACCT TCGTAAGAAG GATGA	235

(2) INFORMATION FOR SEQ ID NO: 214:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 475 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 214:

TAAGGATAAG GAAACCTGTG AATCTTTTTC CCTTCTTTTG TTCAGTTTTG AGAGGTCAAT	60
GACGCTCATA CTGAGTACCA GGTGACACGT TTTTGAGGTG TCTCTTCGTA TGAGGGGCCT	120
ATAGCTCAGC TGGTTAGAGC GCACGCCTGA TAAGCGTGAG GTCGGTGGTT CGAGTCCACT	180
TAGGCCCACT TTTTGAATA AACCTTTCTT TTTTATATGT TAATAAGGGG CCTTAGCTCA	240
GCTGGGAGAG CGCCTGCTTT GCACGCAGGA GGTGAGCGGT TCGATCCCGC TAGGCTCCAC	300
CAAAGATAGT TTGTTCTTTG AAAACTAGAT AAGAAAAGTT AGTGTAAGAA GACGAAGAGA	360
AACCGTAGGT TTTTCTTCAA CCAAACCGA GAATCAAACC GAGAAAGAAT CTTTCCGTTT	420
TCATAAGCGA TCGCACGTTT ATGAAAACAC AACAACACCT TCGTAAGAAG GATGA	475

(2) INFORMATION FOR SEQ ID NO: 215:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 463 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear



191  
(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 215:

TAAGGATAAG GAAACCTGTG AATCTTTTTC CCTTCTTTTG TTCAGTTTTG AGAGGTCAAT	60
GACGCTCATA CTGAGTACCA GGTGACACGT TTTTGAGGTG TCTCTTCGTA TGAGGGGCCT	120
ATAGCTCAGC TGGTTAGAGC GCACGCCTGA TAAGCGTGAG GTCGGTGGTT CGAGTCCACT	180
TAGGCCCCACT TTTTGAATA AACCTTTCTT TTTTATATGT TAATAAGGGG CCTTAGCTCA	240
GCTGGGAGAG CGCCTGCTTT GCACGCAGGA GGTCAGCGGT TCGATCCCGC TAGGCTCCAC	300
CAAAGATAGT TTGTTCTTTG AAAACTAGAT AAGAAAAGTT AGTGTAAGAA GACGAAGAGA	360
AACCGTAGGT TTTTCTTCAA CCAAAACCGA GAAAGAATCT TTCCGTTTTT ATAAGCGATC	420
GCACGTTTAT GAAACACAA CAACACCTTC GTAAGAAGGA TGA	463

(2) INFORMATION FOR SEQ ID NO: 216:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 216:

TGGCCGGTGC AAAGGGCTG

19